DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0007-00(999) Forsyth
P.I. No.: 0007999
SR 141/Bethelview Road at SR 9

OFFICE: Engineering Services

DATE: November 10, 2009

FROM: Ronald E. Wishon, Project Review Engineer REW

TO: Bobby Hilliard, PE, State Program Delivery Engineer
Attn.: Vinesha Pegram

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held September 14-17, 2009. Initial responses were received on October 29, 2009. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
ROW-1	Connect to Old SR 141 using a driveway opening in lieu of full depth roadway pavement at Sta. 3+635	$279,813	Yes	This "road" is actually a driveway. It is reasonable to design the access to SR 9 as a commercial driveway, which will reduce construction and ROW costs.
ROW-3	Use an alternate retaining wall to protect the transmission pole at Parcel 157 and restrict encroachment on the property	$372,033	Yes	This will be done. This will eliminate some of the impacts to the gas station as well as reduce ROW costs.

P-1	Delete pavement for one left turn lane on SB Bethelview Road	$24,164	No	The intersection of SR 9 and SR 141/Bethelview Road is located only 600 feet from the GA 400 ramps. In order to keep the ramps clear and prevent vehicles from backing up onto GA 400, signal priority will be given to the through lanes on SR 141. For this reason, all other movements will have less green time than normal. This will lead to longer queues; therefore, dual left turn lanes on the approach will help accommodate the additional queued vehicles.
P-2	Delete pavement for one left turn lane on WB SR 9	$34,521	No	See response for P-1.
P-3/ ROW-2	Use 3.3 m lanes in lieu of 3.6 m lanes on SR 9 east of the intersection and move the right of way line at the BP Station to the north	$435,542	Yes	This will be done. The urban surroundings of this project along with the high ROW cost and low truck volumes make using 3.3 m lanes a reasonable decision.
P-4	Use 3.3 m through lanes on Bethelview Road north of the intersection	$151,155	Yes	This will be done. The urban surroundings of this project along with the high ROW cost and low truck volumes make using 3.3 m lanes a reasonable decision.
G-1/ ROW-4	Balance Cut/Fill along Bethelview from Sta. 30+900 to Sta. 31+300	$348,650	Yes	This will be done. Revising the profile will reduce the cut and reduce the project footprint resulting in both construction and ROW savings.
D-1	Use HDPE pipe in lieu of RCP for all storm drains	$94,361	No	GDOT does not have enough historical bid data available to determine that there would be an actual cost savings with HDPE pipe. In cases where several types of pipe are included in the allowable pipe materials chart, Contractors will choose the most economical pipe; therefore, requiring HDPE would be unnecessary. Many Contractors are not comfortable with the unique requirements for HDPE installation which could create problems on construction.

Additional information was provided on November 6, 2009.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved: _____ **Date:** 11/12/09

Gerald M. Ross, PE, Chief Engineer

REW/LLM
Attachments
Ben Buchan
Mary Murray – FHWA Kentucky Division
Bobby Hilliard/Stanley Hill/Vinesha Pegram
Brent Story/Jim Simpson/David Acree/Sam Woods/Robert Elam
Emmanuella Myrthil
Randall Davis
Michelle Brock
Ken Werho
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0007-00(999)
P.I. No. 0007999
SR 141/Bethelview Road @
SR 9 Intersection Improvement

OFFICE: Program Delivery

DATE: October 27, 2009

FROM: Bobby Hilliard, PE, State Program Delivery Engineer B.H.

TO: Ronald E. Wishon, State Project Review Engineer
Attn: Matt Sanders

SUBJECT: **Value Engineering Study – Responses to Recommendations**

This Office has reviewed and considered suggestions presented in the Value Engineering (VE) Report submitted by the Office of Engineering Services and prepared by Lewis & Zimmerman Associates. Recommendations for implementation of the VE Study alternates are listed below, organized by sections in the same manner as the VE Report.

RIGHT-OF-WAY

ALTERNATE:	**ROW-1**
Description:	Connect to Old SR 141 using a driveway opening in lieu of full-depth roadway pavement at Sta. 3+635
Cost Savings:	**$279,813**
Implementation:	The Office of Road Design recommends this alternative **be implemented.**
Discussion:	This "road" is currently functioning as a driveway, as the ROW has been turned back over to the property owners by Forsyth County. It is reasonable to design the access to SR 9 as a commercial driveway, which will reduce construction and ROW costs.

ALTERNATE:	**ROW-3**
Description:	Use an alternative retaining wall to protect the transmission pole at Parcel 157 and restrict encroachment on the property.
Cost Savings:	**$372,033**
Implementation:	The Office of Road Design recommends this alternative **be implemented.**
Discussion:	An alternative retaining wall will be constructable with fewer impacts to the gas station property. This will reduce ROW costs.

PAVEMENT

ALTERNATE:	**P-1**
Description:	Delete pavement for one left turn lane on southbound Bethelview Road and increase median width.
Cost Savings:	**$24,164**
Implementation:	The Office of Road Design recommends this alternative **not be implemented**.
Discussion:	The intersection of SR 9 and SR 141/Bethelview is located only 600 feet from the GA-400 ramps. The close proximity to the GA-400 interchange requires that this signal be included in an interconnecting system. The priority of this system will be given to the through lanes on SR 141 in order to keep the ramps clear and prevent vehicles from backing up on to GA-400. For this reason, all other movements for this signal will have less green time than a normal intersection. Less green time will lead to longer queues than typical; dual lefts on this approach will help accommodate the additional queued vehicles. The cost savings for this alternate will be outweighed by the resulting effects of a single turn left turn lane in this location.

ALTERNATE:	**P-2**
Description:	Delete pavement for one left turn lane on westbound SR 9 and increase median width.
Cost Savings:	**$34,521**
Implementation:	The Office of Road Design recommends this alternative **not be implemented**.
Discussion:	The reasoning provided for not implementing alternate P-1 also applies to P-2.

ALTERNATE:	**P-3 / ROW-2**
Description:	Use 3.3-meter-wide lanes in lieu of 3.6-meter-wide lanes on SR 9 east of the intersection and move the right-of-way line at the BP gasoline station to the north
Cost Savings:	**$435,542**
Implementation:	The Office of Road Design recommends this alternative **be implemented**.
Discussion:	The urban surroundings of this project along with the high ROW cost and low truck volumes make using 3.3-meter lanes a reasonable decision. This will reduce construction and ROW costs.

ALTERNATE:	**P-4**
Description:	Use 3.3-meter-wide lanes in lieu of 3.6-meter-wide lanes on Bethelview Road north of the intersection.
Cost Savings:	**$151,155**
Implementation:	The Office of Road Design recommends this alternative **be implemented**.
Discussion:	The reasoning provided for implementing alternate P-3 also applies to P-4.

GRADING

ALTERNATE:	**G-1 / ROW-4**
Description:	Balance the cut-and-fill grading on Bethelview Road from Sta. 30+900 to Sta. 31+300 by raising the roadway profile and avoid impacts to Parcel #155.
Cost Savings:	**$348,650**
Implementation:	The Office of Road Design recommends this alternative **be implemented.**
Discussion:	Revising the profile of SR 141/Bethelview road will reduce the cut, and reduce the project footprint. This will result in construction and ROW cost savings.

DRAINAGE

ALTERNATE:	**D-1**
Description:	Use HDPE pipe in lieu of precast concrete pip for all storm water drainage lines.
Cost Savings:	**$94,361**
Implementation:	The Office of Road Design recommends this alternative **not be implemented.**
Discussion:	The materials for all pipe (storm drain, cross drain, side drain, etc.) installations will be governed by the results of the soil survey. No pipe material will be specified in the construction plans. The system design will be based on concrete pipe, but the contractor will have the option of using any pipe material allowed by the soil survey (chart summary of allowable materials will be provided in the project general notes).

S.H.
BKH:SH:VCP

Myers, Lisa

Subject: FW: PI#0007999 VE - HDPE pipe recommendation

Please see the information below as clarification as to why we are not recommending not specifying the use of HDPE on this project. Also, it is my understanding that you have received a half sized copy of the cover sheet.
If you should have any additional questions, please do not hesitate to contact me.
Thanks.

Vinesha C. Pegram, P.E.
Associate Project Manager
Office of Program Delivery
404-631-1587
404-631-1588 (fax)

The FHWA's policy for pipe culvert selection requires the State DOTs to consider all available pipe products that are judged to be of satisfactory quality and equally acceptable on the basis of engineering and economic analyses. For GDOT projects, the engineering analysis results in the allowable pipe materials chart. The economic basis for pipe selection results from the contractor competitively bidding their best price for pipe. These conditions seem to meet the requirements of FHWA's policy.

FHWA's policy also states that "where alternative products are determined to have different engineering and economic properties, contracting agencies may select a specific material or product based on the required engineering properties and/or life cycle cost criteria". GDOT does not have any data available to perform a true economic analysis or life cycle cost of culvert materials. As the VE alternate recommends in the discussion section, "to keep prices competitive, GDOT might consider bidding pipes with either RCP or HDPE material". This would allow GDOT to examine a history of specified pipe material prices from a variety of contractors on a variety of projects. Perhaps then a change in policy would be reasonable.

Currently, GDOT bids storm drain pipe without any material specified. This allows the contractor to elect the pipe material which will result in the most competitive bid. The VE recommendation assumes that HDPE pipe will always give more value to the project based on straight unit prices. Without a bid history, it is not fair to say that this will always be the case. A contractor may have a relationship with a concrete pipe manufacturer which could skew their price of concrete pipes. The contractor could have pipe stockpiled from an old job that could be used. There may be a concrete pipe plant 1 mile from the job, whereas HDPE may have a higher delivery cost. Specifying HDPE (or any other material) in the contract will eliminate all other options for the contractor, even if they could get a better price on a different material, thereby reducing the value to the project.

This is a relatively small intersection improvement project that is in final design phase. The drainage design has been complete. About 15% of the pipe on this project is for cross drains; HDPE pipe is specifically prohibited for this application in the allowable pipe materials chart. This reduces the quoted cost savings by the VE team to $81,000. Bethelview Road (northern leg of this intersection) is a County Road that accounts for about 40% of the project length; Forsyth County prefers RCP for all pipe installations. For these reasons, we are recommending not specifying HDPE pipe in the contract, keeping the option with the contractor, allowing for more competitive bids.

Thanks,
Sam Woods
404-631-1628

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	CSSTP-0007-00(999)		

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

Metric

PLAN AND PROFILE OF PROPOSED
SR 141/BETHELVIEW ROAD @
SR 9 (ATLANTA HIGHWAY)
INTERSECTION IMPROVEMENT

FEDERAL AID PROJECT

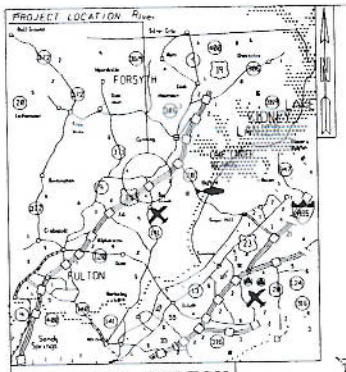
CSSTP-0007-00(999)

FORSYTH COUNTY

FEDERAL ROUTE * NONE

STATE ROUTE * 141 & 9

P. I. NO. 0007999



LOCATION SKETCH

LENGTH OF PROJECT	COUNTY* 117 FORSYTH
NET LENGTH OF ROADWAY	0.472 km
NET LENGTH OF BRIDGES	0.000 km
NET LENGTH OF PROJECT	0.472 km
NET LENGTH OF EXCEPTIONS	0.000 km
GROSS LENGTH OF PROJECT	0.472 km
PERCENT LENGTH OF PROJECT BY COUNTY	100%

DESIGN DATA

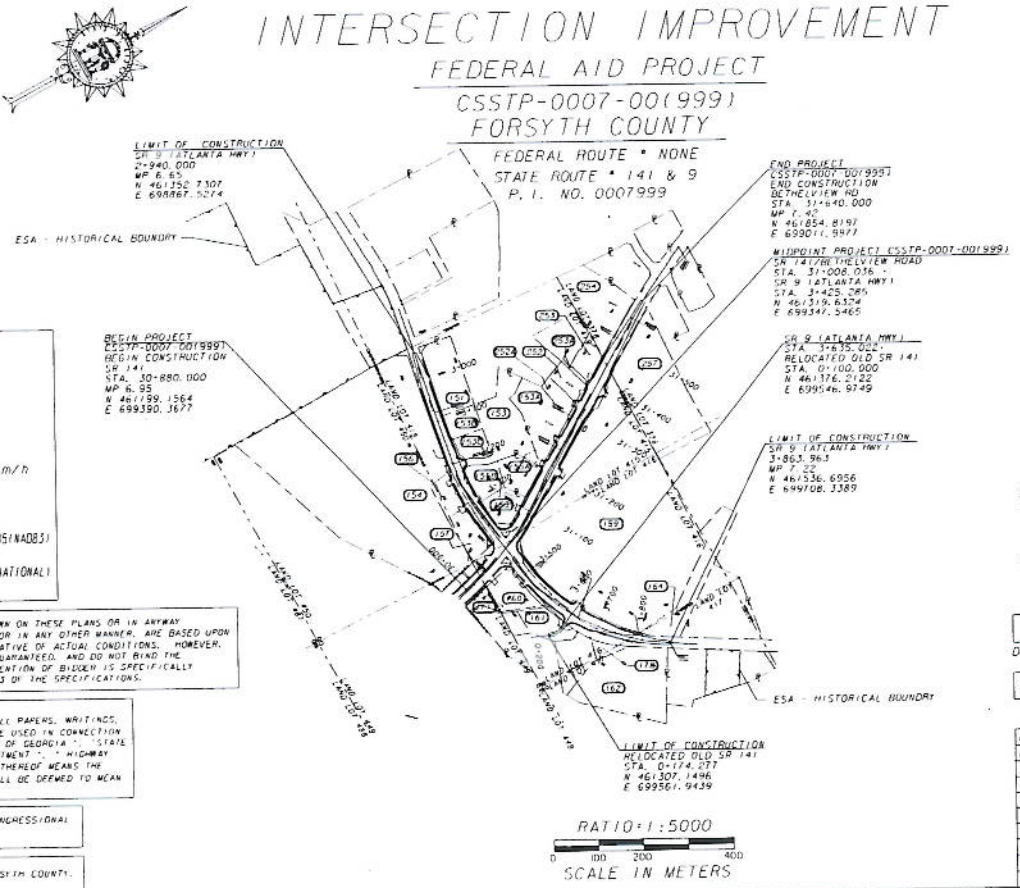
TRAFFIC A.D.T.:	21,250 (2007)
TRAFFIC A.D.T.:	71,500 (2027)
TRAFFIC D.H.V.:	5,725
DIRECTIONAL DIST.:	58%
% TRUCKS:	2%
24 HR. TRUCKS %:	4%
SPEED DESIGN:	70 km/h / 90 km/h
FUNCTIONAL CLASS:	RURAL MAJOR ARTERIAL
DESIGNATION:	EXEMPT FOS
VERTICAL DATUM:	NAVD 88
HORIZONTAL DATUM:	GA. COORDINATE SYS. 83(NAD83)
COORDINATE ZONE:	WEST
PROJECT UNITS:	METRIC (SYSTEM INTERNATIONAL)
COUNTY NUMBER:	117

THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF BIDDER IS SPECIFICALLY DIRECTED TO SUBSECTIONS 102.04, 102.05, AND 104.03 OF THE SPECIFICATIONS.

NOTE:
ALL REFERENCES IN THIS DOCUMENT, WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS, DRAWINGS, OR PHOTOGRAPHS USED, OR TO BE USED IN CONNECTION WITH THIS DOCUMENT, TO " STATE HIGHWAY DEPARTMENT OF GEORGIA ", " STATE HIGHWAY DEPARTMENT ", GEORGIA STATE HIGHWAY DEPARTMENT ", " HIGHWAY DEPARTMENT ", OR " DEPARTMENT " WHEN THE CONTEXT THEREOF MEANS THE STATE HIGHWAY DEPARTMENT OF GEORGIA MEAN, AND SHALL BE DEEMED TO MEAN THE DEPARTMENT OF TRANSPORTATION.

THIS PROJECT IS LOCATED 100 PERCENT WITHIN CONGRESSIONAL DISTRICT NO. 7

THIS PROJECT IS LOCATED 100 PERCENT WITHIN FORSYTH COUNTY.



RATIO: 1:5000

0 100 200 400

SCALE IN METERS

PARSONS
5395 TRIANGLE PARKWAY, SUITE 100
NORCROSS, GA 30092

Heath & Linebuck Engineers
INCORPORATED
2396 CANTON ROAD, BUILDING 200
MARIETTA, GEORGIA 30066-5393

PREPARED BY: _____

RECOMMENDED FOR SUBMISSION BY: _____
STATE CONSULTANT DESIGN ENGINEER

SUBMITTED BY: _____
STATE ROAD AND AIRPORT DESIGN ENGINEER

DATE _____ CHIEF ENGINEER

L & D APPROVAL DATE 12-10-97

PLANS COMPLETED	
REVISIONS	

DRAWING NO. 01-01

J:\2006035\TASK ORDER 8-9\0007999\DGN\0007999DGN01.DGN

\01 DGN\0007999CV01.DGN 10/29/2008 2:43:19 PM swoods

PRECONSTRUCTION STATUS REPORT FOR PI:0007999

PROJ ID : 0007999
COUNTY : Forsyth
LENGTH (MI) : 0.40
PROJ NO.: CSSTP-0007-00(999)
PROJ MGR: Pegram, Vinesha
AOHD Initials: SSH
OFFICE : Program Delivery
CONSULTANT: Consultant Design (DOT contract)
SPONSOR : GDOT
DESIGN FIRM: GDOT Road Design D Acree

SR 141/BETHELVIEW ROAD @ SR 9/ATLANTA HIGHWAY

MPO: Atlanta TMA
TIP #: FT-002A
MODEL YR : 2020
TYPE WORK: Intersection Improvement
CONCEPT: ADD 4R(MED 20)
PROG TYPE: Reconstruction/Rehabilitation
Prov. for ITS: N
BOND PROJ :

PRIORITY CODE:
DOT DIST: I
CONG. DIST: 9
BIKE: Y
MEASURE: M
NEEDS SCORE: 7
BRIDGE SUFF:

MGMT LET DATE : 06/15/2011
MGMT ROW DATE : 09/19/2008
BASELINE LET DATE: 06/09/2011
SCHED LET DATE : 7/21/2011
WHO LETS?: GDOT Let
LET WITH :

BASE START	BASE FINISH	LATE START	LATE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%
				Concept Development	4/12/1990	8/13/1990	100
				Concept Meeting	5/17/1990	5/17/1990	100
				PM Submit Concept Report	7/11/1990	7/11/1990	100
				Receive Preconstruction Concept Approval	8/13/1990	8/13/1990	100
				Management Concept Approval Complete	**8/13/1990**	**8/13/1990**	**100**
	10/20/2009		11/26/2009	Value Engineering Study	6/19/2009		83
				Environmental Approval	**10/6/2007**	**9/3/2008**	100
				Preliminary Plans	**10/1/1996**	**1/9/2000**	100
				Underground Storage Tanks	7/3/1991	11/4/2004	100
				R/W Plans Preparation	6/25/1997	10/14/1997	100
				R/W Plans Final Approval	**10/9/1997**	**6/30/2008**	**100**
				L & D Approval	11/26/1997	12/10/1997	100
				R/W Authorization	7/10/2009	7/10/2009	100
1/15/2010	1/28/2010	2/26/2010	3/11/2010	Stake R/W			0
				Soil Survey	11/18/1996	11/21/1997	100
	12/9/2010		**1/6/2011**	**Final Design**	**10/2/2006**		66
12/31/2010	1/3/2011	1/28/2011	1/31/2011	FFPR Inspection			0
1/31/2011	2/11/2011	2/28/2011	3/11/2011	Submit FFPR Responses (OES)			0

PROGRAMMED FUNDS

Activity	Approved	Proposed	Cost	Fund	Status	Date Auth
ROW	2009	2009	6,052,800.00	L240	AUTHORIZED	7/10/2009
UTL	NONE	2010	409,500.00	L240	PRECST	
CST	2009	2011	8,424,327.09	L240	PRECST	

ROW Cost Est Amt:	6,052,800.00	Date:	3/20/2009
Utility Cost Est Amt	390,000.00	Date:	1/6/2009
CST Cost Est Amt:	7,641,113.00	Date:	1/6/2009

STIP AMOUNTS

Activity	Cost	Fund
ROW	6,894,182.40	L240
UTL	0.00	L240
CST	7,056,720.00	L240

Bridge: NO BRIDGE REQUIRED
Design: SH:VCP/-PARSONS, assessing VE study recommendations 10-6-09
EIS: Reeval appd 03-11-09 |On Schd Feb 2010 let|upd 08-25-09| Myrthil
LGPA: REV PMA SGN DOT DO ROW|UTIL & CST 12-24-03| SEE PI# 121980-
Planning: SR 9 is on Forsyth Bike/Ped Plan for bikeable shoulder
Programming: SPLIT FROM PI# 121980-
ROW: Need revised R/W Plans based on VE Comments 10/21/09(mb)
Traffic Op: >PA/LTN PREP SIGNAL PLANS FOR FFPR pend RD update 8-5-09
Utility: DISTRICT READY 11/18/08
EMG: RECST/REHAB (INTERSECTION IMPROVEMENT)

District Comments

This project was split from STP-104-1(39) in 2006.

VE Study held 9/14/09. Assessing VE Study recommendations for ROW impacts and preparing responses. 10-6-09

Prel. Parcel CT:		**Total Parcel in ROW System:**	24	**Cond. Filed:**	0	**Acquired by:**	DOT	***DEEDS CT:***	0
Under Review:	0	**Options - Pending:**	0	**Relocations:**	0	**Acquisition MGR:**	Brock, Michelle		
Released:	0	**Condemnations- Pend:**	0	**Acquired:**	0	**R/W Cert Date:**			